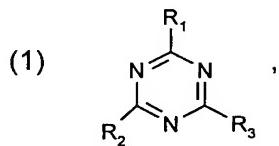


Patent claims:

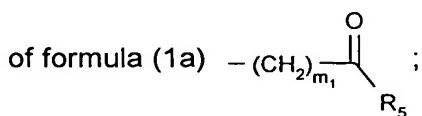
1. Use of a mixture of micronised organic UV filters in protecting human and animal skin and hair against the damaging effect of UV radiation.
2. Use according to claim 1, wherein the organic UV filters are selected from triazine or benzotriazole derivatives, amides containing a vinyl group, cinnamic acid derivatives, sulfonated benzimidazoles, Fischer base derivatives, diphenylmalonic acid dinitriles, oxaryl amides, camphor derivatives, diphenyl acrylates, para-aminobenzoic acid (PABA) and derivatives thereof, salicylates and benzophenones.
3. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



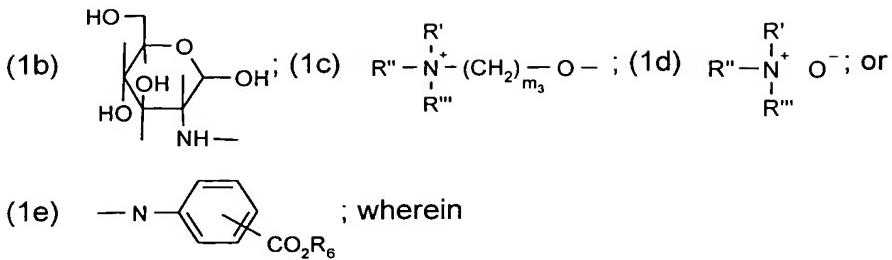
wherein

R₁, R₂ and R₃ are each independently of the others hydrogen; OH; C₁-C₁₈alkoxy; -NH₂; -NH-R₄; -N(R₄)₂; -OR₄,

R₄ is C₁-C₅alkyl; phenyl; phenoxy; anilino; pyrrolo, wherein phenyl, phenoxy, anilino and pyrrolo are unsubstituted or may be substituted by one, two or three OH groups, carboxy, -CO-NH₂, C₁-C₅alkyl or C₁-C₅alkoxy; a methyldene-camphor group; a group of formula -(CH=CH)_mC(=O)-OR₄; a group of formula or a corresponding alkali metal, ammonium, mono-, di- or tri-C₁-C₄alkylammonium, mono-, di- or tri-C₂-C₄alkanolammonium salt, or a C₁-C₃alkyl ester thereof; or a radical



R₅ is hydrogen; C₁-C₅alkyl unsubstituted or substituted by one or more OH groups; C₁-C₅alkoxy; amino; mono- or di-C₁-C₅alkylamino; M; a radical of formula



R' , R'' and R''' are each independently of the others C₁-C₁₄alkyl unsubstituted or substituted by one or more OH groups;

R_6 is hydrogen; M; C₁-C₅alkyl; or a radical of formula -(CH₂)_{m₂}-O-T₁;

M is a metal cation;

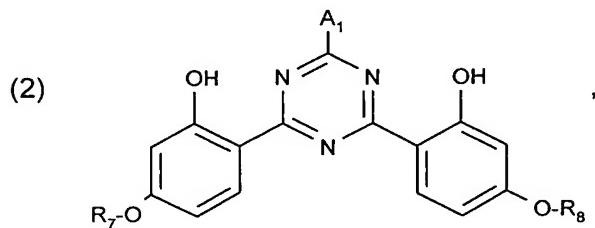
T₁ is hydrogen; or C₁-C₈alkyl;

m is 0 or 1;

m₂ is from 1 to 4; and

m₃ is from 2 to 14.

4. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



wherein

R_7 and R_8 are each independently of the other C₁-C₁₈alkyl; C₂-C₁₈alkenyl; a radical of formula -CH₂-CH(-OH)-CH₂-O-T₁; or

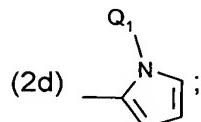
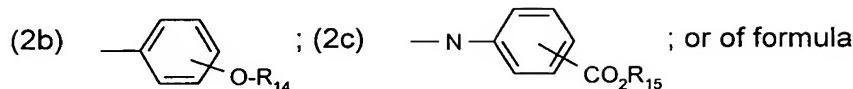
R_7 and R_8 are a radical of formula (2a) $R_9-\left[\begin{array}{c} R_{10} \\ | \\ Si-O \\ | \\ R_{11} \end{array}\right]_{p_1}-Si-R_{12}$;

R_9 is a direct bond; a straight-chain or branched C₁-C₄alkylene radical or a radical of formula -C_{m₁}H_{2m₁}-O-;

R_{10} , R_{11} and R_{12} are each independently of the others C₁-C₁₈alkyl; C₁-C₁₈alkoxy or a radical

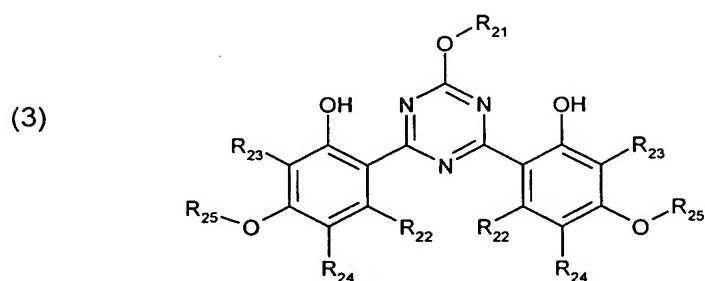
of formula $\begin{array}{c} R_{13} \\ | \\ -O-Si-R_{13} \\ | \\ R_{13} \end{array}$;

- R₁₃ is C₁-C₅alkyl;
m₁ is from 1 to 4;
p₁ is from 0 to 5;
A₁ is a radical of formula



- R₁₄ is hydrogen; C₁-C₁₀alkyl, -(CH₂CHR₁₆-O)_{n₁}-R₁₅; or a radical of formula
-CH₂-CH(-OH)-CH₂-O-T₁;
R₁₅ is hydrogen; M; C₁-C₅alkyl; or a radical of formula -(CH₂)_{m₂}-O-(CH₂)_{m₃}-T₁;
R₁₆ is hydrogen; or methyl;
T₁ is hydrogen; or C₁-C₈alkyl;
Q₁ is C₁-C₁₈alkyl;
M is a metal cation;
m₂ and m₃ are each independently of the other from 1 to 4; and
n₁ is from 1 to 16.

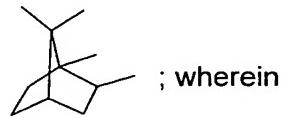
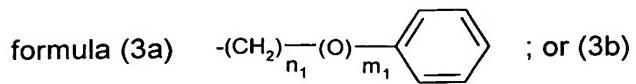
5. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



wherein

R₂₁ is C₁-C₃₀alkyl; C₂-C₃₀alkenyl; C₅-C₁₂cycloalkyl unsubstituted or mono- or poly-substituted by C₁-C₅alkyl; C₁-C₅alkoxy-C₁-C₁₂alkyl; amino-C₁-C₁₂alkyl; C₁-C₅-monoalkylamino-C₁-C₁₂alkyl; C₁-C₅dialkylamino-C₁-C₁₂alkyl; a radical of

formula (3a)



; wherein

R₂₂, R₂₃ and R₂₄ are each independently of the others hydrogen, -OH; C₁-C₃₀alkyl,

C₂-C₃₀alkenyl,

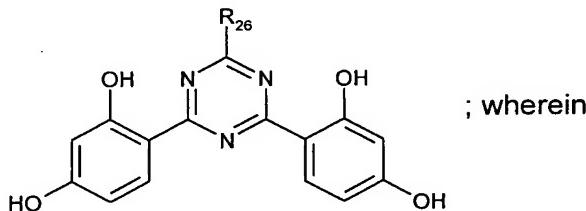
R₂₅ is hydrogen; or C₁-C₅alkyl;

m₁ is 0 or 1; and

n₁ is from 1 to 5.

6. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula

(4)

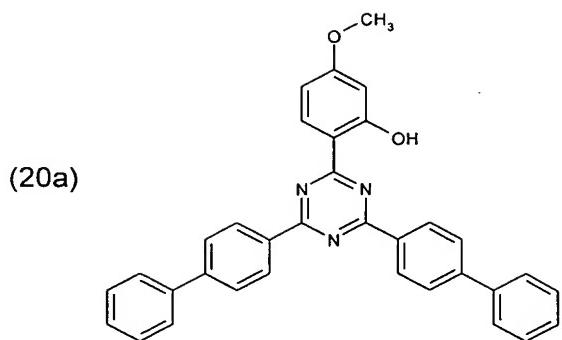


; wherein

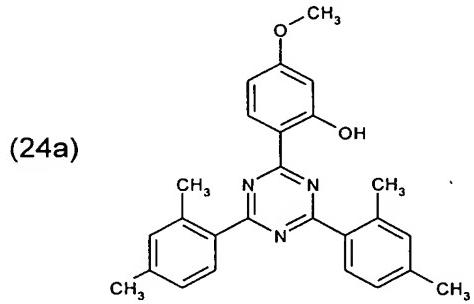
R₂₆ is $\text{--N}\begin{pmatrix} (\text{CH}_2)_r\text{-CH}_3 \\ | \\ (\text{CH}_2)_s\text{-CH}_3 \end{pmatrix}$; and

r and s are each independently of the other from 0 to 20.

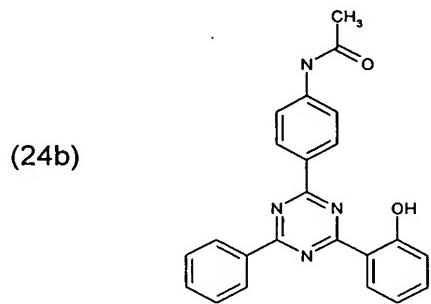
7. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



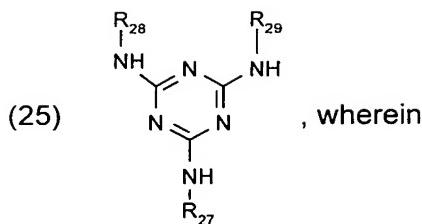
8. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



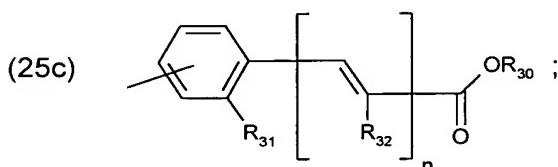
9. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



10. Use according to claim 1 or 2, wherein the organic UV filters are selected from triazine derivatives of formula



R₂₇, R₂₈ and R₂₉ are each independently of the others a radical of formula



R₃₀ is hydrogen; an alkali metal; an ammonium group -N(R₃₃)₄,

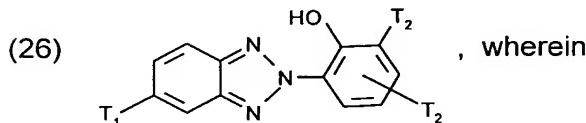
R₃₃ is hydrogen, C₁-C₅alkyl; or a polyoxyethylene radical that has from 1 to 10 ethylene oxide units and the terminal OH group can be etherified with a C₁-C₅alcohol;

R₃₁ is hydrogen; -OH; or C₁-C₆alkoxy;

R₃₂ is hydrogen or -COOR₃₀; and

n is 0 or 1.

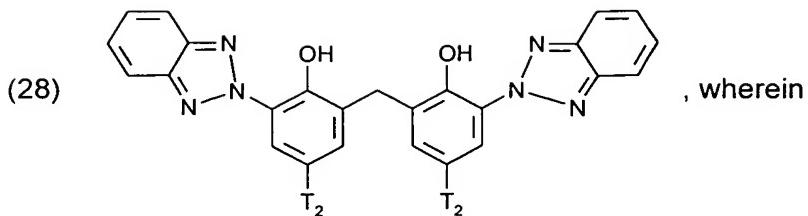
11. Use according to either claim 1 or claim 2, wherein the organic UV filters are selected from benzotriazole derivatives of formula



T₁ is C₁-C₅alkyl or hydrogen; and

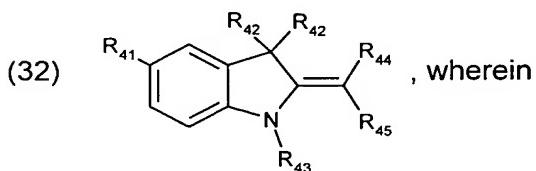
T₂ is C₁-C₅alkyl or phenyl-substituted C₁-C₅alkyl.

12. Use according to either claim 1 or claim 2, wherein the organic UV filters are selected from benzotriazole derivatives of formula



T₂ is C₁-C₄alkyl or phenyl-substituted C₁-C₅alkyl.

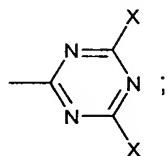
13. Use according to either claim 1 or claim 2, wherein the Fischer base aldehydes correspond to formula



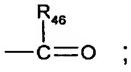
R₄₁ is hydrogen; C₁-C₅alkyl; C₁-C₁₈alkoxy; or halogen;

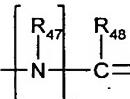
R₄₂ is C₁-C₈alkyl; C₅-C₇cycloalkyl; or C₆-C₁₀aryl;

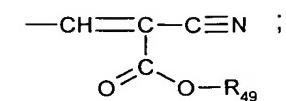
R₄₃ is C₁-C₁₈alkyl or a radical of formula (32a)



R₄₄ is hydrogen; or a radical of formula



R₄₅ is  ; C₁-C₁₈alkoxy; or a radical of formula (32b)

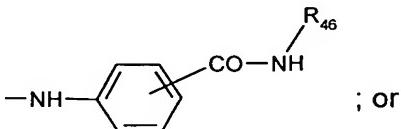


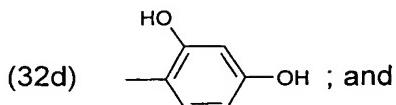
R₄₆ and R₄₇ are each independently of the other hydrogen; or C₁-C₅alkyl;

R₄₈ is hydrogen; C₁-C₅alkyl; C₅-C₇cycloalkyl; phenyl; phenyl-C₁-C₃alkyl;

R₄₉ is C₁-C₁₈alkyl;

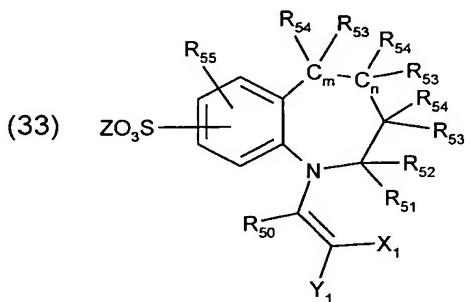
X is Hal; a radical of formula (32c)





n is 0; or 1.

14. Use according to claim 1 or 2, wherein the organic UV filters are selected from compounds of formula



wherein

R_{50} , R_{51} , R_{52} , R_{53} , R_{54} are each independently of the others hydrogen, C_1 - C_8 alkyl or C_5 - C_{10} -cycloalkyl;

R_{55} is hydrogen; C_1 - C_8 alkyl; C_5 - C_{10} cycloalkyl; hydroxy; C_1 - C_8 alkoxy; $COOR_{56}$; or $CONR_{57}R_{58}$;

R_{56} , R_{57} and R_{58} are each independently of the others hydrogen or C_1 - C_6 alkyl;

X and Y are each independently of the other hydrogen, -CN; CO_2R_{59} ; $CONR_{59}R_{60}$; or COR_{59} ; it being possible for the radicals X and Y additionally to be a C_1 - C_8 alkyl radical, a C_5 - C_{10} alkyl radical or a heteroaryl radical having 5 or 6 ring atoms, it also being possible for X and Y or

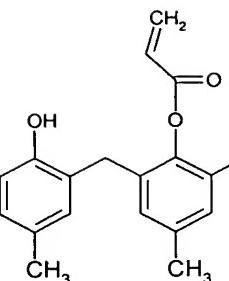
R_{50} together with one of the radicals X and Y to be the radical for completing a 5- to 7-membered ring which may contain up to 3 hetero atoms, it being possible for the ring atoms to be substituted by exocyclically double-bonded oxygen and/or by C_1 - C_8 alkyl and/or by C_5 - C_{10} cycloalkyl radicals and/or to contain C=C double bonds;

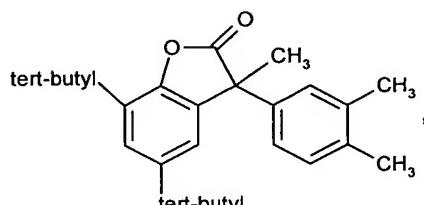
Z is hydrogen; ammonium; an alkali metal ion; or the cation of an organic nitrogen base used for neutralisation of the free acid group,

R_{59} and R_{60} are each independently of the other hydrogen, C_1 - C_8 alkyl or C_5 - C_{10} cycloalkyl; and

n and m are each independently of the other 0 or 1.

15. A process for the preparation of mixtures of the organic UV filters suitable for use according to the invention defined in any one of claims 1 to 14, wherein the UV filters, which are in micronised form, are intimately mixed together.
16. A process for the preparation of mixtures of the organic UV filters suitable for use according to the invention defined in any one of claims 1 to 14, wherein the organic UV filters are micronised in the form of mixtures of at least two single substances.
17. A process for the preparation of mixtures of the organic UV filters suitable for use according to the invention defined in any one of claims 1 to 14, wherein at least two single substances are melted together, the melt is cooled and the resulting composite is then subjected to a micronisation process.
18. A composite, obtainable by melting together at least two of the organic UV filters defined in any one of claims 1 to 14.
19. Use according to any one of claims 1 to 14, wherein an inorganic pigment is additionally incorporated into the mixture.
20. Use according to claim 19, wherein the inorganic pigments are selected from TiO₂, ZnO, iron oxides, mica and titanium or zinc salts of organic acids.
21. A composite, obtainable by melting together at least two of the organic UV filters defined in any one of claims 1 to 14 and at least one of the inorganic pigments defined in claim 19 or 20.
22. Use according to any one of claims 1 to 14, wherein an antioxidant is additionally incorporated into the mixture.
23. Use according to claim 22, wherein the antioxidant is selected from tocopherols, ellagic acid, propyl gallate, butylated hydroxytoluene, butylated hydroxyanisole, 2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)mesitylene, tetrakis[methylene-3-(3',5'-di-tert-butyl-4'-hydroxyphenyl)-

propionate]methane, the compound of formula tert-butyl-tert-butyl, the

compound of formula, vanillin, ubiquinone, ferulic acid,

ferulic acid derivatives, rutinic acid, rutinic acid derivatives; urocanic acid, urocanic acid derivatives; and propolis.

24. A composite, obtainable by melting together at least two of the organic UV filters defined in any one of claims 1 to 14 and at least one of the antioxidants defined in claim 22 or 23 and optionally one or more inorganic pigments.

25. Use according to any one of claims 1 to 14, wherein a cationic or anionic compound is incorporated into the mixture.

26. Use according to claim 24, wherein the cationic or anionic compound is selected from camphor benzalkonium methosulfates, fatty amines, betaines, quats, citric acid mono-glyceride, sodium methylcocoyl taurate, phospholipids, ceramides and phytosterols.

27. A composite, obtainable by melting together at least two of the organic UV filters defined in any one of claims 1 to 14 and at least one of the cationic or anionic compounds defined in claims 25 and 26.

28. Use according to any one of claims 1 to 14, wherein a pharmaceutical or cosmetic active ingredient is additionally incorporated into the mixture.

29. A cosmetic formulation, comprising a mixture of at least two of the organic UV filters

defined in any one of claims 1 to 14, optionally one or more antioxidants and/or inorganic pigments and/or a cationic or anionic compound, and also cosmetically acceptable carriers or adjuvants.

30. A cosmetic formulation according to claim 29, which additionally comprises an oil-soluble, non-micronised UV filter.

31. A pharmaceutical formulation, comprising a mixture of at least two of the organic UV filters defined in any one of claims 1 to 14, optionally one or more antioxidants and/or inorganic pigments and/or a cationic or anionic compound, and also pharmaceutically acceptable carriers or adjuvants.